

# Notes on the Short-necked Tortoises *Emydura australis* (Gray) and *Elseya dentata* (Gray) in the Victoria River system, Northern Territory

by

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In 1841 Gray described a tortoise, which although suspected of having been collected in north-western Australia, had no locality data. For many years this species was little known, and it is only recently that additional knowledge of it has been obtained. This species differs from any other described Australian species in the heavy symphysis of the mandibles, and the corresponding development of the alveolar surfaces of the maxillaries. He called this tortoise *Hydraspis australis*. Boulenger (1889) placed this species in the genus *Emydura*, where it has since remained. In 1842 Gray described *Hydraspis victoriae*, based on shells from the Victoria River, but in 1855 synonymized this

taxon with *Chelymys macquaria* (sic.). In 1872, he re-erected the name as *C. victoriae*, and while recognizing *C. krefftii* Gray, included specimens of this species with *C. victoriae*. Boulenger (1889) placed *H. victoriae* Gray with *Emydura macquarrii* (sic.), a move which other workers (e.g. Wermuth and Mertens, 1961) followed. Goode (1967) finally placed it with *E. australis*, where it at present remains.

In 1863 Gray described a second species from the Victoria River, which he called *Chelymys dentata*. In 1867 he erected a new genus *Elseya* with *dentata* as the type species. This

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## Plate 1.

A small water-hole on Timber Creek, the preferred habitat of *Emydura australis*.



species differed from all other Australian species by the presence of a median alveolar ridge, and also from *E. australis* by the narrow symphysis of the mandibles.

As little has been published on either of these two species, we thought it appropriate to record some of the variations and habitat preferences observed during several weeks' field work on the Victoria River in September 1963 and August 1964.

Two methods were used to obtain tortoises. The first was drum nets made from collapsible steel rods and wire frames bolted together, with fishing net of 3 cm mesh drawn over the frame. Fish and beef proved equally successful as bait. The second method was gill nets in which free swimming tortoises became entangled. Drum nets proved to be much more productive, and had the advantage over gill nets of being always re-usable. Both types of net had to be checked at least twice daily to prevent captured tortoises being drowned.

Collecting was mainly from four waterholes (1 and 2) Timber Creek, a tributary of the Victoria River, (3) Jasper Creek, another tributary and (4) Tortoise Reach on the Victoria River proper. The two on Timber Creek were (a) Immediately behind the Timber Creek general store, approximately 1 km upstream from its junction with the Victoria River, and (b) A further 8 km or so upstream. The Jasper Creek hole was the southernmost one in Jasper Gorge, which is situated some kilometres north of the Victoria River Downs homestead. Tortoise Reach is upstream from Timber Creek, and quite close to Coolibah Homestead.

Not until a series of some fifty specimens had been collected was it evident that only two species (*Emydura australis* and *Elseya dentata*) were represented. The major differ-

ence in the shields of these two species is the nuchal, which is present in *australis* and absent in *dentata*. The shell of *australis* is very similar to that of *E. macquarii* of south-eastern Australia. There is a greater external difference between animals of varying sizes, belonging to the same species, than between those of similar proportions yet differing species. The greatest variations between the two species are most evident in juveniles and very old specimens.

The juvenile *dentata* are much more dentate on the posterior marginal shields than are the young of *australis*. When attaining a shell size approximately equal to that of a fully-grown *australis*, *dentata* is much flatter in appearance, and has a much smaller head. At this stage of growth, *dentata* has only reached about two-thirds of its maximum size. As maximum size is reached, the carapace becomes much more ovate, humped, and extremely dark. The plastron, uniformly pale in young specimens, becomes piebald and finally almost entirely blackish, except for a small central area. This darkening of the plastron was not observed in *australis*. At all stages of its development, until near maximum size, *dentata* has a fairly uniformly coloured head, which in older specimens becomes mottled. On the other hand, *australis* has the two head stripes typical of some of the other *Emydura* species, differing only in juvenile *australis*. These stripes are a bright salmon red, which gradually fades until in old specimens it is only pale pinkish.

Although both of these species inhabit the same river system, it became evident during collecting that *australis* showed a marked preference for smaller waterholes than those preferred by *dentata*. Thus, at Timber Creek, the smaller (both in width and depth) holes had a marked predomi-

nance of *australis*, the larger deeper hole at Jasper Creek a predominance of *dentata*, while the extremely large waterhole in the main stream at Tortoise Reach yielded only *E. dentata*. Whether further collecting will confirm these findings awaits to be seen.

Perhaps it is interesting to note that the waterhole in Jasper Creek had a large population of Freshwater Crocodiles, *Crocodylus johnsoni*, a species which was apparently absent in Timber Creek. Whether or not this reptile preys on the tortoises, or influences the preferences of waterholes, poses an interesting problem.

The only other tortoises collected were one *Chelodina* sp. taken in a drum net from the hole behind the Timber Creek store, and several specimens of *C. ? rugosa* dug up by Aborigines from an aestivating site at King Billabong on the Victoria River several miles downstream from its junction with Timber Creek.

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